

REMARKS

Claims 1 and 2, are rejected under 35 U.S.C. 103(a) as being unpatentable over Applicant's admitted prior art. Claims 3-7 are rejected under 35 U.S.C. 103(a) as being unpatentable over Applicant's admitted prior art in view of Bayes (6,054,061). Claims 9-13 and 15 are rejected under 35 U.S.C. 103(a) as being unpatentable over Applicant's admitted prior art. Claims 16, 17, and 18 are rejected under 35 U.S.C. 103(a) as being unpatentable over Applicant's admitted prior art in view of Bayes. Claims 8, 14, and 19 are allowed.

1. Objection to the drawings:

The drawings are objected to because of illegibility.

To overcome this objection, please accept three (3) new pages of drawings, having figures 1 to 3 in three separated sheets, respectively. No change is made in the figures except that the figure 2 is now moved to a separated sheet for the sake of clarity. Reconsideration of the newly submitted drawings is therefore politely requested.

2. Objections to claims 1 and 11:

Claims 1 and 11 are objected due to informalities. The examiner alleges that in claims 1 and 11, "NH₂OH" should read -NH₄OH-. Applicant submits that there is no clerical error in claims 1 and 11. The amine-based solvent such as NH₂OH (hydroxylamine) is commonly used for wafer cleaning purposes. For example, U.S. Pat. No. 6,024,106, owned by the same assignee of the present application, discloses a solvent including an amine-based compound such as hydroxylamine for post-CMP wafer clean. For this reason, withdrawal of the objections to claims 1 and 11 is therefore politely requested.

3. 35 U.S.C. 112 rejections of claims 6 and 17:

Claims 6 and 17 are rejected under 35 U.S.C. 112, second paragraph. The examiner states that on lines 2-3, "reducing the H₂O₂ concentration of the diluted H₂O₂ solution to below 100:1 (v/v)" is indefinite because it is unclear what two components are referred to in the volumetric ratio.

To overcome the 35 U.S.C. 112 rejections, claims 6 and 17 have been specifically amended. Reconsideration of the once amended claims 6 and 17 is therefore politely requested. Though, it is respectively noted that the diluted H₂O₂ solution disclosed in this application shall be well recognized by those skilled in the art as diluted H₂O₂ aqueous solution for cleaning wafers.

4. Rejection of claim 1 under 35 U.S.C. 103(a):

Claim 1 is rejected under 35 U.S.C. 103(a), for reasons of record that can be found on pages 3-4 in the Office action identified above, which is part of paper no.4.

To overcome this rejection, claim 1 has been amended. The allowed claim 8 is merged into claim 1. No new matter is entered. Reconsideration of the once amended claim 1 is therefore politely requested.

None of the prior arts discloses the step of *washing away cupric oxide generated in the oxidation step by means of a cupric oxide cleaning solution containing diluted HF, NH₄F or NH₂OH having a pH of above 7*, as required by the amended claim 1. Accordingly, the Applicant suggests that the once amended claim 1 is now in condition for allowance, and such action is therefore respectfully requested.

5. Rejections of claims 2-7 under 35 U.S.C. 103(a):

Claims 2-7 are rejected under 35 U.S.C. 103(a), for reasons of record that can be found on pages 3-6 in the above-indicated Office action, which is part of paper no.4.

As claims 2-7 are dependent upon the once amended claim 1, they should be allowable if the once amended claim 1 is allowed. Further, none of the prior arts discloses the step of purging inert gas onto the wafer during the application to the wafer of the diluted H₂O₂ solution, as required by claim 3. Reconsideration of claims 2-7 is therefore politely requested.

6. Rejection of claim 9 under 35 U.S.C. 103(a):

Claim 9 is rejected under 35 U.S.C. 103(a), for reasons of record that can be found on pages 6 and 7 in the above-indicated Office action, which is part of paper no.4.

To overcome this rejection, claim 9 has been amended. The allowed claim 14 is merged into claim 1. No new matter is entered.

To sustain a 35 U.S.C. 103(a) rejection, all claim limitations must be taught or implied in the references. It is respectfully suggested that none of the cited references, alone or in combination, teach or make obvious all of the limitations of the once amended claim 9. Reconsideration of the once amended claim 9 is therefore politely requested.

7. Rejections of claims 10-13 and 15-18 under 35 U.S.C. 103(a):

Claims 10-13 and 15-18 are rejected under 35 U.S.C. 103(a), for reasons of record that can be found on pages 6-9 in the above-indicated Office action, which is part of paper no.4.

As claims 10-13 and 15-18 are dependent upon the once amended claim 9, they should be allowable if the once amended claim 9 is allowed. Reconsideration of claims 10-13 and 15-18 is therefore politely requested.

Sincerely yours,

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